CLAIMS

1. A reaction chamber comprising:

- a first container (1) consisting essentially of a wall delimiting a volume which is substantially closed, apart from at least one first orifice (2) formed in said wall,

- a second container (4) consisting essentially of a wall delimiting a volume which is substantially closed, apart from a second orifice (5) connecting the second container to a first end of a conduit (6) having an open second end (7),

in which:

- said first and second containers are integral,

- said second container and said conduit are integral,

- said open second end is inside the first container,

said chamber being capable of occupying two positions, namely

- a first position in which said first orifice (2) is in an upper position relative to the other parts of the first container (1), and said second orifice (5) is in a lower position relative to the other parts of the second container (4), and

- a second position in which said first orifice (2) is in a lower position relative to the other parts of the first container (1), said second orifice (5) being in an upper position relative to the other parts of the second container (4), and said open end (7) of the conduit is aligned with and at a distance from said first orifice (2), and the configuration of said chamber being such that when the chamber is rotated in a first predetermined direction from said first position to said second position, any liquid contained in said second container (4) remains in the second container without being able to flow through said conduit (6) to said open end (7), and when the chamber is rotated in a second predetermined direction, from

said first position to said second position, any liquid contained in said second container (4) flows through said conduit (6) and reaches said open end (7).

2. The reaction chamber as claimed in claim 1, in which said second container (4) and the conduit (6) are inside the first container (1).

3. The reaction chamber as claimed in claim 1, in which said conduit has at least one bend.

4. The reaction chamber as claimed in claim 3, in which said conduit comprises a system of two bends in the shape of a Z.

5. The reaction chamber as claimed in any one of the preceding claims, in which said conduit comprises a first part from the orifice of the second container to a first bend at a distance from the second orifice, a second part from the first bend to a second bend, then a third part from the second bend to the open end, and in which, in said first position, said first bend occupies an upper position relative to the second orifice and said second end occupies a lower position relative to said first bend.

6. The reaction chamber as claimed in any one of claims 3 to 5, in which the branches of the bend or bends are inclined relative to the vertical in said first and second positions of said chamber.

7. The reaction chamber as claimed in any one of the preceding claims, furthermore comprising a first outer tube (3), one end of which is connected to said first orifice (2), said tube occupying a vertical position above the first container (1) in said first position of the chamber, and below the first container in the second position.

8. The reaction chamber as claimed in any one of the preceding claims, furthermore comprising a second tube (8), one end of which opens into the first conduit (6) and the other end (8b) of which is outside the chamber, said second tube being sealable in its part outside the chamber.

9. The reaction chamber as claimed in any one of the preceding claims, in which said containers and said tubes and conduit form a closed assembly containing a first glass in the first container and a second glass, of different index, in the second container.

10. The reaction chamber as claimed in any one of the preceding claims, in which said containers conduit and tubes are made of silica or pyrex glass.

11. A method for preparing an optical fiber preform or an optical fiber with a cladding glass and a core glass, of different indices, with the aid of a reaction chamber as defined in any one of the preceding claims, in which:

- the cladding glass is introduced into the first container (1) and the core glass is introduced into the second container (4), the chamber occupying said first position or a similar position,
- the chamber is evacuated,
- the chamber is heated to a sufficient temperature for the two glasses to be liquid,
- the chamber is rotated in the first predetermined direction,

from said first position to said second position, so that the cladding glass flows under gravity toward then through the first orifice (2),

- the chamber is returned to said first position, and
- after a predetermined time, the reaction chamber is rotated in said second predetermined direction, from the first position to the second position, so that the core glass which has remained liquid in the second container passes through the second orifice (5), enters the conduit (6), and reaches the open end (7) through which it flows under gravity and passes through said first orifice (2).

12. The method as claimed in claim 11, in which the chamber comprises said outer tube as defined in claim 7.

13. The method as claimed in claim 12, in which:

- after the chamber is rotated in said first predetermined direction, the cladding glass passes through the first orifice (2) and fills said outer tube (3), while the core glass remains confined in the second container (4),

- said outer tube (3) is cooled for a predetermined time so that a part of the cladding glass close to the wall of the outer tube solidifies, while the part of the cladding glass in the axial region of the tube is still liquid,

- the chamber is then returned from the second position to said first position, so that the part of the cladding glass which is still liquid flows under gravity into the first container (1), while the solidified part of the cladding glass remains in the tube (3), the axial part of which is empty,

- after said rotation of the chamber in said second predetermined direction, the core glass which has remained liquid in the second container (4) flows along the conduit (6) then falls through the first orifice (2) into the axial part of the tube (3),

- and if so desired, the preform obtained in this way is converted into an optical fiber.